SW N°1: SIMPLE SEQUENTIAL ALGORITHM

Exercise 01 :

Indicate whether the following words can be used as identifier or values and give its types :

Xx25ab	2y	-0.5	1,8	lire	&	'5'	"vap"	'd"	0	'M'	'#'
alpha	25,3	14.5	-11	c/n	#ff	a*b	false	y^2	g!	"R"	
Ajou5	+9	+10.6	"k=14.9"		"15"	true	Ahmed		gt-at	F_i	
xy<5	d^y	cinq	google.com		X_1	a_1	"-11,6"		'vap'	vap	

Exercise 02 :

Answer the following statements with “true” or “false” to (indicate errors in the following c declarations):

1) int S_1, S_2;	2) int S1, S2;	3) int S, S';
4) float A – B – C;	5) float (A, B, C);	6) char A, B, c;
7) char NomEtudiant[30];	8) char nom étudiant[30];	9) char nom_etudiant[30];
10) int : R;	11) entier R;	12) float R; int N;

Exercise 03 :

Propose a declaration for each of the following variables :

- Student’ last name
- State of a switch
- Examination score
- Wilaya of Algeria
- Student number
- Roots of a 2nd degree equation
- Status of a student
- Number of available units of a product

Exercise 04 :

Give the outputs of the given Algorithms :

```
Algorithm A1
Var
  a, b : integer;
begin
  a := 1;
  b := a + 2;
  a := 3;
   Write ("a = ‘,a, ‘b = ‘, b);

end
```

```
Algorithm A1
Var
  a, b, c : integer;
begin
   a := 6;
   b: = 12;
   c := b+2;
   a := a-2;
   b := c*2;
   write (a, b, c);
end.
```

```
Algorithm A1
Var
  a, b,c : integer;
begin
    a := 7;
    b: = a+1;
   c:= b div 2;
   c := c-2;
   a: = b;
   write (a,b,c);
end.
```

Exercice 05

find the errors in the given algorithms, correct and unroll them

```
Algorithme  0test
Var
   a,b,c : integer ;
    d,  e    real;
    tr : bool;
begin
  read(a,b);
  d:=a/b
  c:= d mod 5;
  e:= a*b-c
   write(d,c,e,tr);
end.
```

```
Algorithme  1test
Var
   a,b,c : integer ;

begin
  write('give two number in range 0 to 20 :');
  read(a,b);
  c:= a+b/2;
 bl:= (c<10)or(a<5)or(b<5)
  write('the result is ',true);
end.
```

Exercise 06 : Write two Algorithm that SWAP or switches the values of two integer A and B: first using an auxiliary variable and without an auxiliary variable for the second.

Exercise 07 : Write an Algorithm that asks for a number from the user, then calculates and displays the square of this number.

Exercise 8 : Write an Algorithm that inputs the price of an item (excluding tax), the number of items and the VAT rate. The Algorithm then provides the total price including tax. (Make sure the labels appear clearly)

Exercise 9 : Write an Algorithm that allows you to calculate the determinant of a quadratic equation: $ax^2 + bx + c$.

Exercise 10 : Write an Algorithm that calculates and displays the area of a rectangle, where the width and height will be given by the user.